

AMENDMENTS TO THE CLAIMS

1-15. (Canceled)

1 **16.** (New) A digital camera comprising:

2 an auto exposure system for determining an auto exposure value responsive to the image
3 statistics of a scene;

4 a live preview display system for displaying a live preview of the scene comprising

5 an image capture device for producing a digital signal having an amplitude and
6 representing an image frame of the live preview of the scene,

7 a programmable amplifier coupled to the image capture device for adjusting the
8 digital signal amplitude,

9 a controller coupled to the programmable amplifier for enabling an overlay icon
10 representing a soft key control for adjusting the digital signal amplitude when the auto
11 exposure time for the image frame exceeds a predetermined value above which the image
12 frame is likely to be smeared or dark; and

13 an image display coupled to the programmable amplifier for displaying the image frame
14 and the overlay icon.

1 **17.** (New) The digital camera of claim 16 further comprising:

2 a frame refresh controller coupled to the image capture device for refreshing the image
3 frame at a frame rate.

1 **18.** (New) The digital camera of claim 16 further comprising:

2 a frame refresh controller coupled to the image capture device for refreshing the image
3 frame at a frame rate that varies in response to variation of the auto exposure time for the image
4 frame.

1 **19.** (New) The digital camera of claim 16 further comprising:

2 a frame refresh controller coupled to the image capture device for refreshing the image
3 frame at a frame rate that varies in response to operation of the soft key control.

1 20. (New) The digital camera of claim 16 further comprising:
2 means in the controller for testing the auto exposure time against a first predetermined
3 value to determine whether the image frame is likely to be smeared; and
4 means in the controller for testing the auto exposure time against a second predetermined
5 value to determine whether the image frame is likely to be dark.

1 21. (New) The digital camera of claim 16 further comprising:
2 means in the controller for producing a first overlay icon representing a soft key control
3 for adjusting the digital signal amplitude over a range; and
4 means in the controller for producing a second overlay icon representing an end-of-range
5 condition of the soft key control.

1 22. (New) The digital camera of claim 16 further comprising:
2 in the auto exposure controller, means for determining a range of auto exposure values
3 within which a predetermined noise limit for the image of a scene is not exceeded; and
4 in the controller, means coupled to the programmable amplifier for adjusting the digital
5 signal amplitude to bring the image frame noise above the predetermined noise limit when the
6 auto exposure time for the image frame exceeds a predetermined value above which the image
7 frame is likely to be smeared.

1 23. (New) The digital camera of claim 16 further comprising:
2 in the auto exposure controller, means for determining a auto exposure value range within
3 which a predetermined noise limit for the image of a scene is not exceeded; and
4 in the controller, means coupled to the programmable amplifier for adjusting the digital
5 signal amplitude to move the exposure value outside of the auto exposure value range when the
6 auto exposure time for the image frame exceeds a predetermined value above which the image
7 frame is likely to be smeared.

1 24. (New) In a digital camera having an auto exposure system for determining an
2 auto exposure time responsive to the image statistics of a scene, a method for displaying a live
3 preview of the scene comprising the steps of:

4 (a) producing a digital signal having an amplitude and representing an image frame
5 of the live preview of the scene;

6 (b) determining an auto exposure time for the image frame statistics; and

7 (c) displaying the image frame, including the step of

8 (c.1) enabling an overlay icon representing a soft key control for adjusting the
9 digital signal amplitude when the auto exposure time for the image frame exceeds a
10 predetermined value above which the image frame is likely to be smeared or dark.

1 25. (New) The method of claim 24 further comprising the step of:

2 (d) repeating the three steps (a)-(c) at a frame rate.

1 26. (New) The method of claim 24 further comprising the step of:

2 (d) repeating the four steps (a)-(c) at a frame rate that varies in response to variation
3 of the auto exposure time for the image frame.

1 27. (New) The method of claim 24 further comprising the step of:

2 (d) refreshing the image frame at a frame rate that varies in response to operation of
3 the soft key control.

1 28. (New) The method of claim 24 further comprising the steps of:

2 (c.1) comparing the auto exposure time with a first predetermined value above which
3 the image frame is likely to be smeared; and

4 (c.2) comparing the auto exposure time with a second predetermined value above
5 which the image frame is likely to be dark.

1 29. The method of claim 24 further comprising the steps of:

2 (c.1.1) enabling a first overlay icon representing a soft key control for adjusting the
3 digital signal amplitude over a range when the auto exposure time for the image frame exceeds
4 a predetermined value above which the image frame is likely to be smeared or dark; and

5 (c.1.2) enabling a second overlay icon representing an end-of-range condition of the soft
6 key control.

1 30. (New) The method of claim 24, wherein the auto exposure controller includes
2 means for determining a auto exposure value range within which a predetermined noise limit for
3 the image of a scene is not exceeded, the method further comprising the step of:

4 (d) adjusting the digital signal amplitude to bring the image frame noise above the
5 predetermined noise limit when the auto exposure time for the image frame exceeds a
6 predetermined value above which the image frame is likely to be smeared.

1 31. (New) The method of claim 24, wherein the auto exposure controller includes
2 means for determining a auto exposure value range within which a predetermined noise limit for
3 the image of a scene is not exceeded, the method further comprising the step of:

4 (d) adjusting the digital signal amplitude to move the exposure value outside of the
5 auto exposure value range when the auto exposure time for the image frame exceeds a
6 predetermined value above which the image frame is likely to be smeared.